



MONTHLY REPORT
ON
THE PROGRESS OF THERAPEUTICS.

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BY

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REPORT ON THE PROGRESS OF THERAPEUTICS.

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(Reprinted from the *Edinburgh Medical Journal* for March 1875.)

ANTAGONISM OF MEDICINES.—The pages of the *British Medical Journal* have lately been occupied by the extremely interesting reports of the committee, appointed by the British Medical Association, to investigate the antagonism of medicines. The following are the general conclusions arrived at:—

I. *As to the Antagonism between Strychnia and Chloral Hydrate.*

In this investigation, 114 experiments were performed.

1. After a fatal dose of strychnia, life may be saved by bringing the animal under the influence of chloral hydrate.

2. Chloral hydrate is more likely to save life after a fatal dose of strychnia, than strychnia is to save life after a fatal dose of chloral hydrate.

3. After a dose of strychnia has produced severe tetanic convulsions, these convulsions may be much reduced, both in force and frequency, by the use of chloral hydrate, and consequently much suffering saved.

4. The extent of physiological antagonism between the two substances is so far limited, that (1) a very large fatal dose of strychnia may kill before the chloral hydrate has had time to act; or (2) the dose of chloral hydrate must be so large in such a case to antagonize the fatal dose of strychnia, that there is danger of death from the effects of the chloral hydrate.

5. Chloral hydrate mitigates the effects of a fatal dose of strychnia.

nia by depressing the excess of reflex activity excited by that substance; while strychnia may mitigate the effects of a fatal dose of chloral hydrate by rousing the activity of the spinal cord, but it does not appear to be capable of removing the coma produced by the action of chloral hydrate on the brain.

II. *As to the Antagonism between Sulphate of Atropia and Calabar Bean.*

In this investigation, 114 experiments were performed.

1. Sulphate of atropia antagonizes to a slight extent the fatal action of extract of Calabar bean.

2. The area of antagonism is more limited than even Dr Fraser has indicated in his paper on the subject.

III. *As to the Antagonism between Hydrate of Chloral and Calabar Bean.*

In this investigation, 31 experiments were performed.

1. Hydrate of chloral modifies, to a great extent, the action of a fatal dose of extract of Calabar bean, mitigating symptoms and prolonging life.

2. Hydrate of chloral, in some cases, saves life from a fatal dose of extract of Calabar bean.

3. If hydrate of chloral be given before extract of Calabar bean, so that the animal is deeply under the influence of hydrate of chloral before it receives the extract of Calabar bean, the symptoms produced by the latter are much modified, and life is saved from the effects of what would otherwise be a fatal dose.

4. Chloral hydrate is of little service as an antagonist of extract of Calabar bean, if given some time after the latter. If the symptoms of the action of Calabar bean be in full operation, it will not save life, however it may modify the symptoms.

5. The antagonism is limited—

(a.) *By the amount of dose of the Calabar bean;* more than a minimum fatal dose of extract of Calabar bean destroying life, notwithstanding the administration of chloral hydrate.

(b.) *By the interval of time between the administration of the two substances.* There is a great probability of saving life in those instances in which the animal is under the influence of chloral hydrate before the subcutaneous injection of the Calabar bean; there is less probability when both substances are given simultaneously; there is still less if the chloral hydrate be given from five to eight minutes after the extract of Calabar bean; and no chance at all if the chloral hydrate be given eight minutes after a fatal dose of extract of Calabar bean.

6. Even in cases in which a fatal result follows the action of the two substances, the physiological effects of extract of Calabar bean are considerably modified by those of chloral hydrate.

IV. *As to the Antagonism between Hydrochlorate and Meconate of Morphia and Calabar Bean.*

In this investigation, 40 experiments were performed.

Hydrochlorate and meconate of morphia in no way antagonize extract of Calabar bean.

V. *As to the Antagonism between Sulphate of Atropia and Meconate of Morphia.*

In this investigation, 81 experiments were performed on rabbits and dogs.

a. In Rabbits.

1. Sulphate of atropia is physiologically antagonistic to meconate of morphia within a limited area.

2. Meconate of morphia does not act beneficially after a large dose of sulphate of atropia, for in those cases the tendency to death is greater than if a larger dose of either substance had been given alone.

3. Meconate of morphia is not specifically antagonistic to the action of sulphate of atropia on the vaso-inhibitory nerves of the heart.

4. The beneficial action of sulphate of atropia in cases of poisoning by meconate of morphia is probably attributable to the action which the former substance possesses of contracting the blood-vessels, thus diminishing the tendency to cerebral and spinal congestion produced by salts of morphia.

b. In Dogs.

Sulphate of atropia modifies the physiological action of meconate of morphia, and may even save life after a fatal dose of the latter. The limit, however, is so narrow as to be of no practical service.

VI. *As to the Antagonism between Tea, Coffee, Theine, Caffeine, Guaranine, on the one hand, and Meconate of Morphia on the other.*

In this investigation, 117 experiments were performed.

1. Theine is antagonistic to meconate of morphia, inasmuch as the action of the one substance modifies that of the other, and may even save life from a fatal dose of either substance.

2. Meconate of morphia delayed the appearance of the convulsions characteristic of the action of theine; but, on the other hand, theine, if given in large doses, did not affect to a marked degree the action of meconate of morphia, because symptoms of poisoning by theine were soon manifested.

3. Further experiments on cats showed that (a) while a cat may recover from the effects of a dose of $1\frac{3}{4}$ grains of meconate of morphia given alone, it will not recover from the effects of a dose of 2 grains, even although the effects of the latter dose are modified

by those following the introduction of 4 or 5 grains of theine; (b) that in three cases the animals recovered from the effects of $1\frac{7}{8}$ grains of meconate of morphia, and 4 to 5 grains of theine, while they died when the same dose of meconate of morphia was administered eight days after; (c) that when the dose of theine was increased beyond 5 grains, the animals invariably died, apparently from the effects of the theine.

4. Experiments on rabbits as to the antagonism between meconate of morphia and theine were found to be unsatisfactory as regards the purposes of this inquiry, because both drugs produce epileptiform convulsions in these animals.

5. The results obtained in investigating the action of caffeine and guaranine as antagonists to meconate of morphia, were similar to those observed with reference to theine.

6. Experiments were made on dogs to ascertain the effects of strong infusion of tea and decoctions of coffee as antagonists to meconate of morphia. These were unsatisfactory, chiefly because the tea or coffee was usually vomited so soon as to prevent the possibility of the exercise of any physiological antagonism. At the same time it was observed, in several instances, that the administration of tea or coffee so excited the animals as to prevent them from falling into stupor or coma after a dose of meconate of morphia, which would have produced this effect had the tea or coffee not been given.

VII. *As to the Antagonism between Extract of Calabar Bean and Strychnine.*

In this investigation, 30 experiments were performed.

Although the symptoms produced by either substance were modified considerably by the action of the other, there was no instance of recovery from a fatal dose.

VIII. *As to the Antagonism between Bromal Hydrate and Atropia.*

In this investigation, 36 experiments were performed.

1. There is a distinct physiological antagonism between bromal hydrate and atropine.

2. After a fatal dose of bromal hydrate, the introduction of atropia arrests excessive secretion from the salivary glands and mucous surfaces of the lungs, and thus obviates the tendency to death from asphyxia, caused by the accumulation of fluids in the air-passages. Atropia also causes contraction of the bloodvessels, and thus antagonizes the action of bromal hydrate, which causes dilatation of these vessels by paralysis of the sympathetic nerve.

3. While atropia may save life after a fatal dose of bromal hydrate, the converse apparently does not hold good, as we have never succeeded in saving life after a fatal dose of atropia by the subsequent injection of bromal hydrate.


ACTION OF NITRITE OF AMYL ON THE TEMPERATURE OF THE BODY.—Dr A. Ladendorf (*Berliner Klinische Wochenschrift*, No. 43) finds from many observations that the temperature always rises. The smallest maximal elevation noticed was $0\cdot2^{\circ}$ F., and the highest was $3\cdot38^{\circ}$ F. The mean rise was $0\cdot7^{\circ}$.

NITRITE OF AMYL IN CARDIALGIA.—In all cases of cardialgia uncomplicated with gastric ulcer, Fuckel recommends the inhalation of a few drops of nitrite of amyl. In the neuralgic disorders accompanying menstruation, and in a case of rheumatic tetanus, he has also had satisfactory results with this agent.—*Deutsches Archiv für Klin. Med.*, 1874.

THE THERAPEUTIC ACTION OF IPECACUANHA.—M. C. A. Polichronie has recently published a work on the above subject. The following are his conclusions:—1. Emetine is the true active principle of ipecacuanha; 2. In dysentery, as in diarrhœa, ipecacuanha administered as an enema produces the same effects as when it is given by the mouth; 3. Ipecacuanha, as an enema, is one of the best treatments which can be employed in infantile cholera; 4. In the diarrhœa and sweating of phthisis, enemata of ipecacuanha give the best results.—*L'Union Médicale*, 26th Nov. 1874.

LOCAL ANÆSTHESIA BY SULPHIDE OF CARBON.—In the *Gaz. Méd. de l'Algeria*, Dr Charles Bernard relates several cases in which sulphide of carbon was employed to produce local anæsthesia. In one case six grammes, poured drop by drop on the part, and made to evaporate quickly, acted efficiently; and in another case, ten grammes applied by a spray apparatus enabled the operator to make six deep incisions into a large carbuncle without inflicting pain.—*New Remedies*, July.





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